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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,058	04/19/2007	Kevin Francis Dolman	21503-0002US1	9663

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EXAMINER	
WASAFF, JOHN SAMUEL	
ART UNIT	PAPER NUMBER
3742	

NOTIFICATION DATE	DELIVERY MODE
07/21/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary	Application No.	Applicant(s)	
	10/598,058	DOLMAN, KEVIN FRANCIS	
	Examiner	Art Unit	
	JOHN WASAFF	3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/23/09; 04/19/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
(f) BACKGROUND OF THE INVENTION.
    (1) Field of the Invention.
    (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.
(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).
(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

1. Claims 11-12, 17-18, 22-24 are objected to because of the following informalities: all use "X weight %" as opposed to the more standard "X % by weight," where X is a number. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. In claim 2, it is unclear what applicant means by "solid feed materials." For the purposes of examining, this was interpreted to mean *any* material that could be fed (i.e., added) to the melt.

5. In claim 4, it is unclear what applicant means by "free carbon." This was interpreted to mean *any* source of carbon.

6. Regarding claims 1, 6, and 14, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

7. Claims 1-3, 6, 11-13, 15, 17-20, 22-23 are rejected under 35 U.S.C. 102 as being anticipated by applicant's admitted prior art (hereinafter AAPA).

8. Regarding claim 1, AAPA describes a method of producing a carbide-containing ferroalloy welding consumable material for subsequent use for producing a hardfacing on a suitable substrate (welding consumables used in production of hardafacing; p. 2, ln. 12-16) comprising the steps of: forming a homogeneous melt that has a required concentration of key elements, such as carbon, chromium and manganese, for a chromium carbide-containing ferroalloy welding consumable material (Table 1 shows key elements of carbon, chromium, and manganese used in blended, i.e., homogenized, powders, ; p. 2, ln. 15-20; p. 3, ln. 23-28); and forming a solid carbide-containing ferroalloy welding consumable material from the melt (uniform blend of carbide-containing ferroalloy formed; p. 3, ln. 7-13).

9. Regarding claim 2, AAPA describes forming the homogeneous melt from solid feed materials (ferroalloy blend derived from powder, i.e., solid feed materials; p. 3, ln. 7-13).

10. Regarding claim 3, AAPA describes forming the homogeneous melt from a chromium-containing ferroalloy material (high carbon ferrochromium used in formation of melt; p. 2, ln. 12-16).

11. Regarding claim 6, AAPA describes step (a) comprises forming the homogeneous melt from an iron-containing material (other than a chromium-containing ferroalloy) such as scrap steel or scrap high chromium white cast iron, to dilute the chromium concentration in the melt (ferromanganese, i.e., material besides chromium-containing ferroalloy, also used in formation of melt; p. 2, ln. 12-16).

12. Regarding claims 11 and 17, AAPA describes the ferroalloy welding consumable material has chromium content in the range 30-65 weight % (chromium content of 63%; p. 2, ln. 15-20).

13. Regarding claims 12 and 18, AAPA describes the ferroalloy welding consumable material has a chemically combined carbon content greater than 7.5 weight % (ferrochromium and powder blend both have combined carbon content of 8.4%; p. 2, ln. 15-20)

14. Regarding claim 13, AAPA describes step (b) comprises casting the melt into a suitable mould(s) or other casting means and thereafter breaking up the cast product into a suitable form, such as powder form (ferrochromium and ferromanganese mechanically combined into powder form; p. 3, ln. 7-13).

15. Regarding claim 15, AAPA describes a chromium carbide-containing ferroalloy welding consumable material produced by the method of claim 1 (p. 3, ln. 7-13).

16. Regarding claim 19, AAPA teaches a method of producing a hardfacing weld deposit on a suitable substrate comprising forming a weld pool of the chromium carbide-containing ferroalloy welding consumable material of claim 15 and a welding wire material on a substrate and thereafter depositing a hardfacing weld deposit of material from the weld pool on the substrate (hardfacing weld deposit on substrate from weld pool of chromium-carbide ferroalloy and welding wire shown described in "Typical Prior Art Hardfaced Weld Deposit"; p. 3, ln. 20 to p. 4, ln. 20).

17. In claim 20, AAPA describes a hardfacing weld deposit on a suitable substrate produced by the method defined in claim 19 (p. 3, ln. 20 to p. 4, ln. 20).

18. In claim 22, AAPA describes a chromium content of less than 35 weight % (Table 2 lists chromium content of less than 35%; p. 3, ln. 30 to p. 4, ln. 5).

19. In claim 23, AAPA describes a combined carbon content greater than 4.0 weight % (Table 2 lists carbon content of greater than 4%; p. 3, ln. 30 to p. 4, ln. 5).

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

21. Claims 4-5, 7-8, 10, 14, 16, 21, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Nayar (US Patent No. 3,862,840).

22. AAPA describes all the features as set forth above

AAPA does not teach forming the homogeneous melt from a source of free carbon, or adding graphite to the melt to supersaturate the melt with carbon. AAPA also does not teach holding a melt temperature to dissolve carbon in the melt to produce a required concentration of chemically combined carbon in the solid ferroalloy welding consumable material formed from the melt. AAPA further does not teach de-gassing or atomizing the melt with a suitable gas so that the solid ferroalloy welding consumable material facilitates a stable welding arc in a subsequent hardfacing operation. AAPA also does not teach a particular chromium/carbon ratio or a weld deposit that contains, e.g., boron, up to a maximum of 15 weight %.

Nayar teaches a process for manufacture of hard and non-deformable alloys that adds free carbon in the form of graphite to the pre-alloy powder in order to increase the carbon ratio (i.e., ratio dependent on addition of graphite; col. 6, ln. 25-40). The alloy is then held at a melting temperature (col. 6, ln. 25-40). A reducing gas is used in the process as well to de-gas the melt (i.e., reducing gas hydrogen used to for deoxidization purposes; col. 4, ln. 60-65). Nayar's example utilizes boron as well (Example 1 of Nayar; col. 5, ln. 40-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include free carbon in the melt, since it provides for a higher carbon concentration, which yields higher strength and greater performance in the weld deposit area (col. 6, ln. 35-40).

23. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Oberly et al. (US Patent No. 3,663,313).

24. AAPA teaches all the features as set forth above, but does not teach removing slag from the melt.

Oberly teaches a welding flux composition that describes removing slag (col. 4, ln. 1-5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize slag removal, since doing so provides for a weld deposit substantially free of defects (col. 1, ln. 15-25).

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (See Notice of References Cited.)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN WASAFF whose telephone number is (571)270-1283. The examiner can normally be reached on Monday through Friday, 7:30am to 5:00pm, alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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07/14/10
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